

REMARKS

I. Introduction

These amendments and remarks are being filed in response to the Office Action dated November 14, 2007. No new matter has been added.

Claims 1-5, 8, 9, 11-15 and 17 are currently pending in this application. Claims 6 and 16 have been cancelled. Claims 1 and 17 have been amended and are supported by cancelled claim 6, and the cancellation of claim 16 is without prejudice.

For the following reasons this application should be allowed and the case passed to issue.

II. Claim Rejections under 35 U.S.C. § 103(a)

Claims 1-6, 8, 9 and 11-17 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kilb et al U.S. 2001/0016282 (Kilb) in view of Yanagihara et al., U.S. 5,543,250 (Yanagihara). Applicants respectfully disagree. However, claim 1 and 17 have been amended to expedite prosecution.

Specifically, independent claims 1 and 17 have been amended to each recite, in pertinent part that a path (claim 1) or the gap (claim 17), includes, “pores that communicate with one another and being formed of a part of said current collector plate.” This element was originally recited in now cancelled claim 6.

In order to establish a *prima facie* obviousness rejection under 35 U.S.C. § 103(a), all the claim limitations must be taught or suggested by the prior art. *In re Rokya*, 490 F. 2d 981, 180 USPQ 580 (CCPA 1974). Further, “rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F. 3d

977, 988 (Fed. Cir. 2006). At a minimum, the cited prior art does not disclose (expressly or inherently) a path or gap that includes “pores that communicate with one another and being formed of a part of said current collector plate,” as recited in independent claims 1 and 17.

For example, in FIG. 2 of the instant disclosure, shows that pores (22) are formed of a part of the current collector plate (20) and communicate with other pores. The pores are formed in a porous material, (specification page 13, lines 21-25). The pores are distributed almost the entire interfacial area between the electrode and the bottom of the case of the inner face of the sealing plate (see FIGS. 1-4). As shown in FIG. 1, the conductive sheet or current collector plate, (7) forms the gas transfer path (9), that is distributed at the whole interfacial area between the inner bottom face of the case (2), and the positive electrode (4). The gas transfer path, as claimed, provides high gas-transfer efficiency.

Furthermore, as shown in Table 9 of the present disclosure, the use of a current collector plate, including the pores as defined in the claims, improves gas-transfer, thereby resulting in a battery having excellent characteristics. (See specification page 41, lines 1-6).

Regarding Kilb’s alleged disclosure of a current collector plate comprising a conductive porous material having pores that communicate with one another, the Office Action, at page 4 merely states that “the pores of the supports would inherently be in communication with each other since the electrode is impregnated into the support, and the electrode would communicate fluid between the pores.” As explained below, the recited configuration is not inherent in the device of Kilb.

More specifically, in contrast to the claimed device, Kilb describes recesses (11) in the electrode surface (5) adjacent to the bottom of the case (2), (see paragraph 22). However, Kilb fails to disclose that a gas transfer path is formed by pores that communicate with one another

and that these pores are formed of a porous material, as required in currently amended claims 1 and 17.

Rather, Kilb, describes a whole foam framework, (support) which is buried in the electrode, (Kilb paragraph 16), not a gas transfer path.

Furthermore, Yanagihara fails to cure the deficiencies of Kilb, as at a minimum Yanagihara also fails to disclose, either expressly or inherently that, the path (claim 1) or the gap (claim 17), includes, “pores that communicate with one another and being formed of a part of said current collector.”

In contrast to the subject matter of claims 1 and 17, Yanagihara describes, a plate (1) buried in the electrode (4), hence, the holes of the metal support are **filled** with the electrode material as illustrated in FIGS. 5 and 6 of Yanagihara. Therefore, not providing a gas transfer pathway or gap.

Moreover, the metal substrate of Yanagihara is the core material, (see FIGS. 5 and 6), of a wound battery, (see FIG. 7) and thus has a completely different function as the present stacked battery.

Furthermore, even if the metal substrate of Yanagihara was modified in such a way as to include pores that form a gas transfer path or gap, the metal substrate of Yanagihara would penetrate the adjacent separator (separator 13 as shown in FIG. 7), thereby causing a short-circuit between the positive electrode (12) and the negative electrode (11) of the wound battery.

Accordingly, any modification of Yanagihara to include the pores as recited in the current claims, would destroy the wound battery of Yanagihara.

Moreover, as discussed above, the subject matter of the present disclosure as defined in amended independent claims 1 and 17, requires that pores are formed of a porous material. As

shown in FIGS. 1-4, the pores are distributed at almost the whole interfacial area between the electrode and the bottom of the case or the inner face of the sealing plate. This configuration has the unexpected advantage of providing a high gas-transfer efficiency, thereby improving battery performance, (see specification page 41, lines 1-6).

Therefore, neither Kilb nor Yanagihara, either alone or in combination teach or suggest that a gas transfer path or gap is formed by pores that communicate with one another and that these pores are formed of a porous material, and it would not be obvious to one having ordinary skill in the art to combine these two devices.

Accordingly claims 1 and 17 are allowable over the prior art.

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987).

Therefore, as independent claims 1 is patentable for the reasons set forth above. Therefore, it is respectfully submitted that claims 2-5, 8, 9, 11-15, which are dependent on claim 1, are also patentable.

III. Conclusion

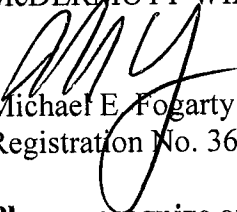
In view of the above amendments and remarks, Applicants respectfully submit that this application should be allowed and the case passed to issue. If there are any questions regarding this Amendment or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

10/511,199

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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